

2017

Headphones and Adolescents: Hearing Loss Prevention

Taylor Sommer
University of Vermont

Follow this and additional works at: <https://scholarworks.uvm.edu/fmclerk>



Part of the [Medical Education Commons](#), and the [Primary Care Commons](#)

Recommended Citation

Sommer, Taylor, "Headphones and Adolescents: Hearing Loss Prevention" (2017). *Family Medicine Clerkship Student Projects*. 220.
<https://scholarworks.uvm.edu/fmclerk/220>

This Book is brought to you for free and open access by the Larner College of Medicine at ScholarWorks @ UVM. It has been accepted for inclusion in Family Medicine Clerkship Student Projects by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.

Headphones and Adolescents: Hearing Loss Prevention

TAYLOR SOMMER
COLCHESTER, VT
DECEMBER 2016-JANUARY 2017
DR. CHISHOLM

Why headphones and adolescents?

- Approximately 17% of American adults (36 million people) report some degree of hearing loss.¹ However, a recent study found that hearing loss in U.S. adolescents age 12 to 19 has increased from 14.9% to 19.5% since 1990.²
- An increasing body of evidence is showing that noise-induced hearing loss can be caused by personal listening devices with headphones.³
- In one school survey, it was noted that over 88% of students used some type of MP3 player. More than a quarter of students listened at dangerously high levels and some showed addictive behaviors.⁴
- Johns Hopkins made the prediction that due to unsafe use of personal listening devices, hearing loss would start to rise.⁵
- Isolator-type headphones are currently being recommended as the safest options due to blocking out background noise and allowing listeners to enjoy music at lower levels.³

Cost to the Public

- Hearing aids are not covered by Medicare Part B, thus putting the burden on patients. As of 2013, to be fitted for and to buy hearing aids was an average of \$4,700.⁶
- Hearing loss has been independently linked to cognitive decline in elderly adults.⁷ This can potentially increase cost of additional medical issues, not just hearing-related problems.
- The CDC found that those with any degree of hearing loss were more likely to be in fair or poor health and had higher rates of psychological distress than those with good hearing.⁸

Community Perspective

- Both school nurses noted that they always see students in the halls and classrooms with headphones on
- One nurse stated that her blog she publishes for the school never gets read by the students. She remarked the best way to get them to listen is to speak with them face to face.
- One student shared that music is a huge part of her life and that it is a necessity to have access to that music—even while studying or working in class.
- At Fast Forward in Colchester, VT in 2015, a random sampling of students showed some headphone volumes as high as 104.3, 106.1, and 109 dB.⁹

Intervention and Methodology

- After discussing PowerPoints, flyers, handouts, and pamphlets the school nurses suggested the best way to reach the students was to do an in-class presentation for them.
- Due to high school and middle school class schedules, it was settled that the sixth grade level would be easiest to present to (3 classes could be done in a 45 minute time slot reaching over 140 students).
- This can be considered a pilot presentation gauging the effectiveness and impact of short presentations on student's listening beliefs and habits

Results and Response

- Nearly every sixth grade student at Colchester Middle School heard a 10 minute presentation.
- The presentation included:
 - An example of what it sounds like to experience hearing loss
 - A group hearing test focused on high frequency sound waves
 - A handful of students also go a decibel reading on their headphones at the current level
 - Warning signs of hearing damage
- Lastly, the presentation had a major focus on which headphones are the safest to use along with usage guidelines.

Effectiveness and Limitations

- A post-presentation survey followed up by a survey a month after the presentation would assess whether or not habits have changed. A positive result would be if students have purchased safer headphones, reduced the volume of their headphones, or reduced the amount of time they listen to headphones.
- The greatest limitation is that of the length of time it takes for noise-induced hearing to impact an individual.
- Additional limitations include only speaking to the sixth grade class when seventh-twelfth are also target audiences and having no baseline data for these student's listening habits.

Recommendations for Future

- Perform a follow-up survey after similar presentations to assess impact it had on students
- Survey students about their listening habits and their thoughts on hearing loss to better tailor future presentations and education
- Provide school nurses a decibel meter to randomly assess student's headphone volumes
- Reach out to additional classes to give more presentations. Face to face contact will carry more weight than any amount of educational reading material for this middle and high schoolers.

References

1. Blackwell DL., et al., *Summary health statistics for U.S. adults: National Health Interview Survey, 2012 (PDF)*. National Center for Health Statistics, Vital Health Stat 10(260), 2014
2. Shargorodsky J., et al., *Change in prevalence of hearing loss in US adolescents*, JAMA. 2010 Aug 18;304(7):772-8.
3. Portnuff CD., *Reducing the risk of music-induced hearing loss from overuse of portable listening devices: understanding the problems and establishing strategies for improving awareness in adolescents*, Adolesc Health Med Ther. 2016 Feb 10;7:27-35
4. Pellegrino E., et al., *Music-listening habits with MP3 player in a group of adolescents: a descriptive survey*. Ann Ig. 2013 Sep-Oct;25(5):367-76
5. Agrawal Y., et al., *Prevalence of Hearing Loss and Differences by Demographic Characteristics Among US Adults Data From the National Health and Nutrition Examination Survey, 1999-2004*, Arch Intern Med. 2008 Jul 28;168(14)
6. National Academies of Science, Engineering, and Medicine News Release June 2, 2016, <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=23446>
7. Lin, Frank R., et al., *Hearing Loss and Cognitive Decline Among Older Adults*, JAMA Intern Med. 2013 Feb 25; 173(4)
8. Schoenborn CA., et al., *Health Disparities Among Adults With Hearing Loss: United States, 2000-2006*, <https://www.cdc.gov/nchs/data/hestat/hearingoo-o6/hearingoo-o6.htm>
9. Fast Forward, Colchester VT, 2016. Reported by Sharon Cote.